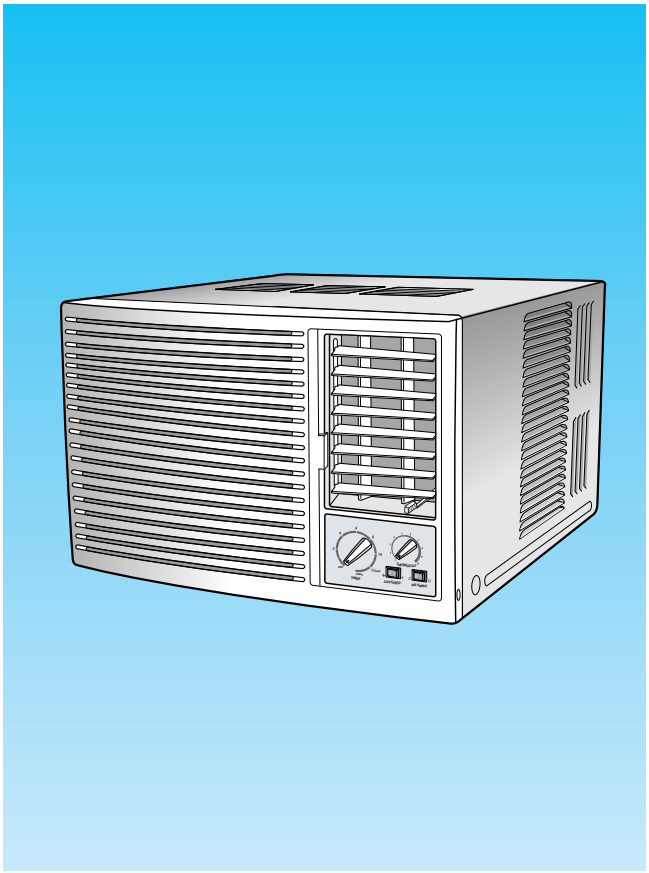
SAMSUNG

ROOM AIR CONDITIONER

AW-1407B
AW-1807B
AW-1817B
AW-1808E
AW240WB0K

SERVICE Manual

ROOM AIR CONDITIONER



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¤ˇ Samsung Electronics Co., Ltd. JAN. 1998.
Printed in Korea.
Code No. DB81-10098A(4)

1. Precautions

1. Warning: Prior to repair, disconnect the power cord from the circuit breaker.

2. Use proper parts: Use only exact replacement parts. (Also, we recommend replacing parts rather than repairing them.)

3. Use the proper tools: Use the proper tools and test equipment, and know how to use equipment may cause problems later-intermittent contact, for example.

4. Power Cord: Prior to repair, check the power cord and replace it if necessary.

5. Avoid using an extension cord, and avoid tapping into a power cord. This practice may result in malfunction or fire.

6. After completing repairs and reassembly, check the insulation resistance, Procedure: Prior to applying power, measure the resistance between the power cord and the ground terminal. The resistance must be greater than 30 megohms.

7. Make sure that the grounds are adequate.

8. Make sure that the installation conditions are satisfactory. Relocate the unit if necessary.

9. Keep children away from the unit while it is being repaired.

10. Be sure to clean the unit and its surrounding area.

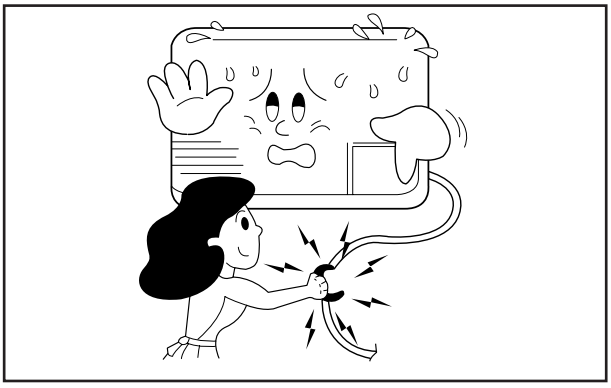


Fig. 1-1 Avoid Dangerous Contact

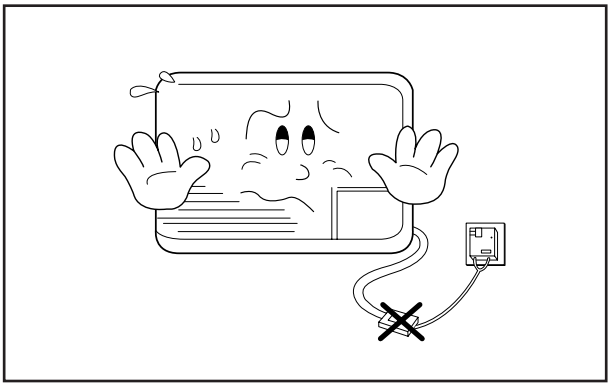


Fig. 1-2 No Tapping and No Extension Cords

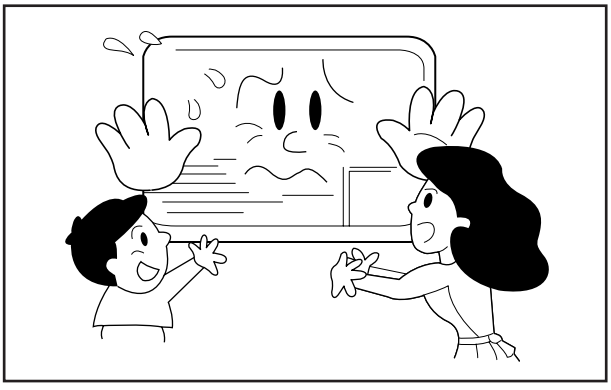


Fig. 1-3 No Kids Nearby!

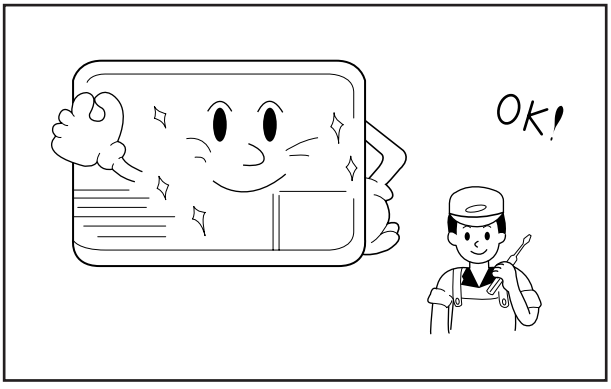


Fig. 1-4 Clean the Unit

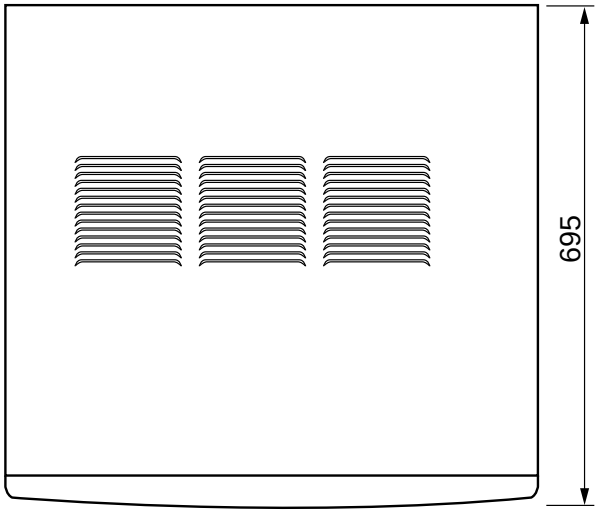
2. Product Specifications

2-1 Table

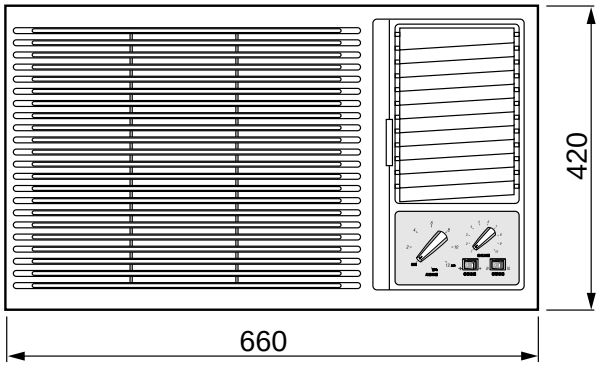
Item	Unit of Measure	AW-1407B	AW-1807B	AW-1817B	AW-1808E	AW240WB
Type	-	Window				
Dimensions: Width¡¿Height¡¿Depth	mm	660¡¿420¡¿695				
Packing Size Width¡¿Height¡¿Depth	mm	737¡¿476¡¿794				
Voltage:	Volt	220		208 ~ 230	220~240	220
Phase	-	Single				
Frequency	Hz	60			50	60
Operating Current	A	6.7	9.2	9.1 / 10.1	8.7	10.7
Power Consumption	W	1,400	2,000	2,045	2,000	2,290
Refrigerant Type	FREON	R-22				
Refrigerant Charge	g	810	820	1,200	1,140	1,200
Cooling Capacity	BTU/h	14,000	18,000	18,000	18,000	22,000
EER	BTU/h.W	10.0	9.0	8.8	9.0	9.6
Net Weight	kg	54	55	58		
Condenser	Row	2¡¿16		3¡¿16		
Condenser Fan	Type	Propeller Fan				
Evaporator	Row	2¡¿14		3¡¿14		
Evaporator Fan	type	Blower				
Fan Motor	W	IC-13635SWF6B	IC-13640SWF6B	IC-13640SWF6B	IC-13435SWJ5A	IC-13640SWF6B
Compressor(Rotary)	Model	48A135IV1E1	48B190IV2E7	48B175IV1E7	48B180JV1E7	48B220IV1E7
Overload Protect	-	MRA12002-9200	MRA12016-12007	MRA12016-12007	MRA12016-12007	MRA12068-12007
Compressor Capacitor Fan Motor Capacitor	§ / VAC § / VAC	25/450 (DUAL) 6/450	40/450 (DUAL) 6/450	35/450 (DUAL) 6/450	40/450 (DUAL) 6/450	40/450 (DUAL) 6/450
Fan Speed Control	-	Fan speed switch(High & Low)				
Thermo Control	-	Thermostat				
Timer Control	hour	12				

2-2 Dimensions

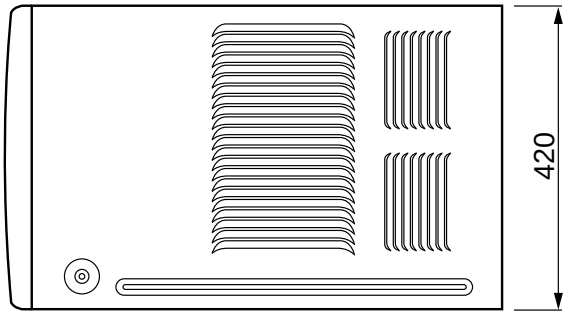
Unit : mm

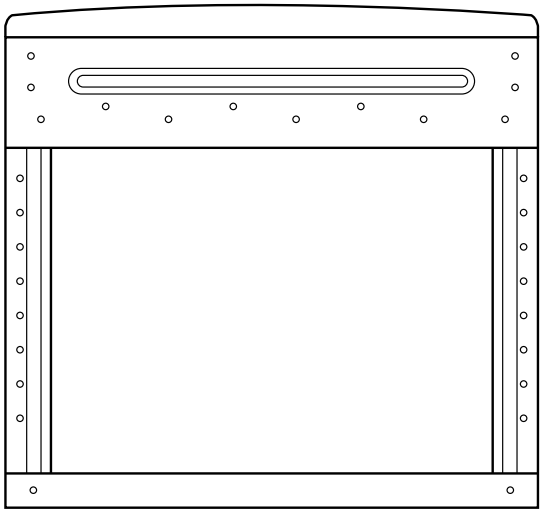


Front view



Side view





3. Installation and Operating Instructions

3-1 Installation

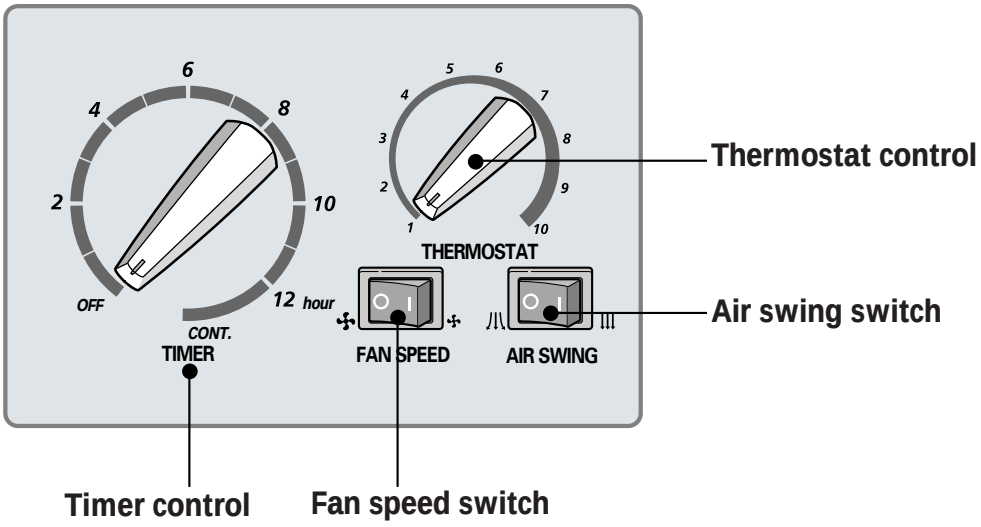
¡ When selecting the area for installing the unit, be sure to obtain approval of the customer.

1. Make sure that you install the unit in an area that provides good ventilation.
   The air conditioner must not be blocked by any obstacle affecting the air flow near the air inlet and air outlet.
2. Make sure that you install the unit in an area which can endure the weight and vibration of the unit.
3. Make sure that you install the unit away from heat or vapor.
4. Make sure that you install the unit in an area where the cooled air can be evenly spread in a room.
5. Make sure that you install the unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances.(obtain a clearance of at least one meter)
6. Make sure that you install the unit in an area which provides easy drainage for condensed water.
7. Make sure that you install the unit in an area not exposed to rain or direct sunlight.
   (Install a separate sunblind if exposed to direct sunlight.)
8. Do not install the unit in an area subjected to noise or vibration amplification which may affect your neighbor.
   (Fix the unit firmly if mounted in a high place.)

Caution:

Do not use the air conditioner in such areas as a greasy area(including machine oil), saline area(sea side), or sulphuric area(hot spring). When using the air conditioner in these areas, special maintenance is required. Contact your local dealer or our service center for advice.

3-2 Operating Instruction



3-2-1 Thermostat control

Off :

When the room temperature is lowered by the air conditioner, the gas within the thermostat will contract and cause a break in the electric contact.
The compressor will then stop.
After the compressor stops, the room temperature will rise.

On :

As the room temperature increases to a selected level, the gas within the thermostat expands, causing electric contact, which provides the source of electric power to the compressor. The room temperature will fall, and the cycle will repeat.

Control Operation :

By turning the control knob clockwise(toward higher numbers), the temperatures will be cooler.
By turning the control knob counterclockwise(toward lower numbers), the temperature will be warmer.

Level 1 : Cool air will be supplied above 30~35¡ .
Cool air will be ceased below 28~32.5¡ .
Level 10 : Cool air will be supplied above 17.4~20.4¡ .
Cool air will be ceased below 14.4~17.4¡ .

3-2-2 Fan speed switch

The fan speed switch offers high and low fan cooling control levels to assure maximum comfort. The two fan speeds allow you to economically circulate room air flow on days when intense cooling is not required. When combined with the thermostat(set to activate the air conditioner), these controls cool, dehumidify, filter, and circulate room air, with the fan continuing to circulate air while the compressor is turned off.

3-2-3 Air swing switch

On ( ) :
Automatic ventilation distributes the air flow throughout the room.
(controls the right and left blade-V.)

Off ( ) :
Maintain a fixed direction of air flow.
Set the air swing switch to OFF the instant the blade-V come to the desired positioner.

3-2-4 Timer

The timer enables the air conditioner to operate for a specified period of time, and then turns off automatically while the user is sleeping, shopping, etc.. To use this function, set the timer to the desired time, and the air conditioner will automatically shut itself off after running for the selected period of time.
Utility bills can be reduced and comfortable temperatures maintained with the use of the timer.
For continuous operation, set the timer control to "continue".

3-2-5 Ventilation switch

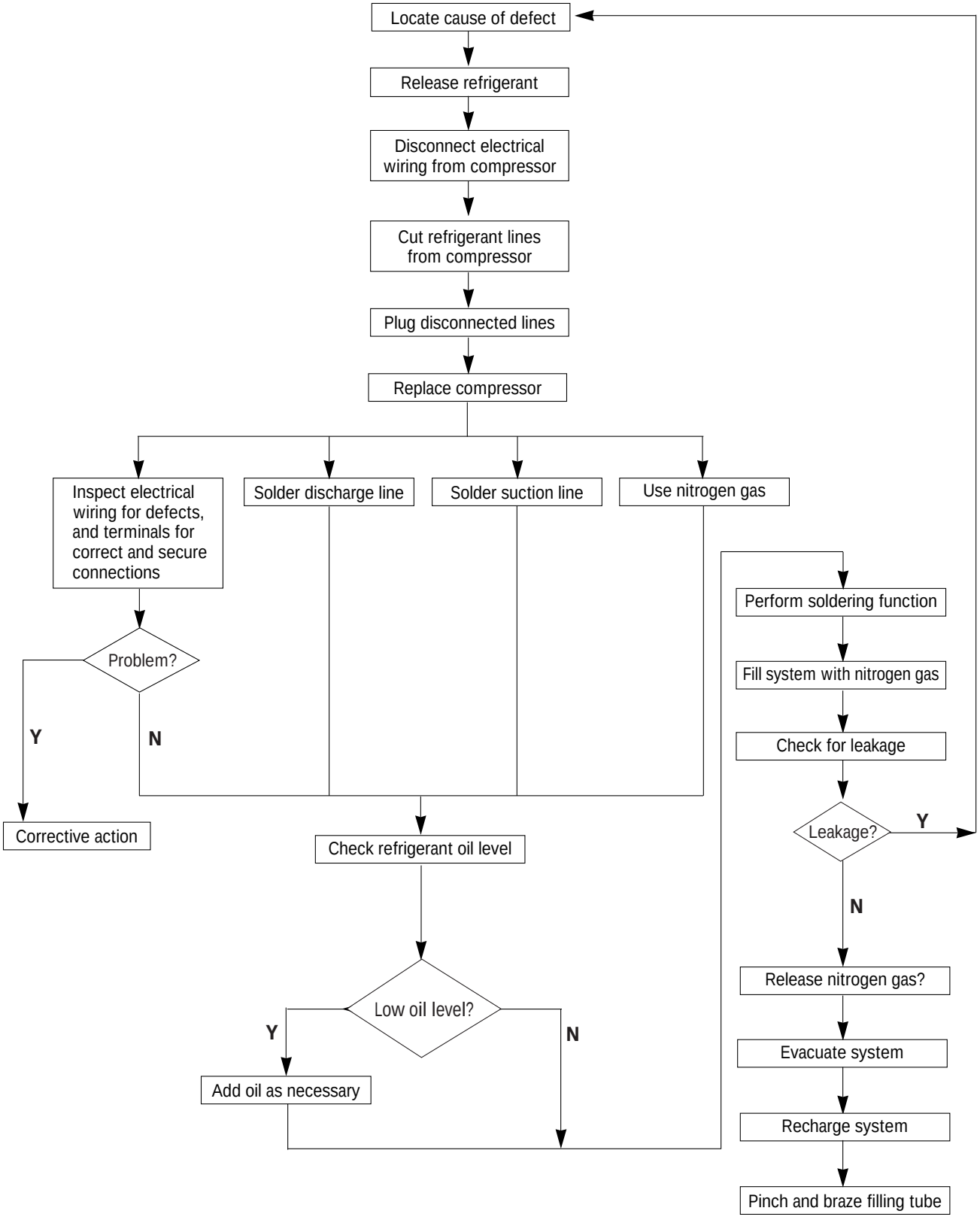
Use the ventilation switch to exhaust stale air.

(Ventilate) : The air inside the room circulates while the outdoor air is introduced inside.

(Stop) : The air inside the room circulates while the outdoor air is not introduced inside.

4. Disassembly and Reassembly

4-1 Compressor Replacement Flow Chart



4-2 Checking the Oil

Fill the transparent container with 10cc of oil, and then conduct the test.

4-2-1 Oil quality

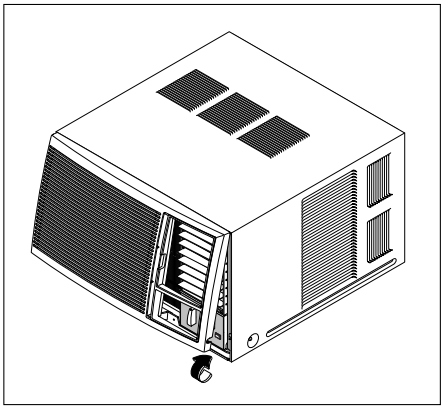
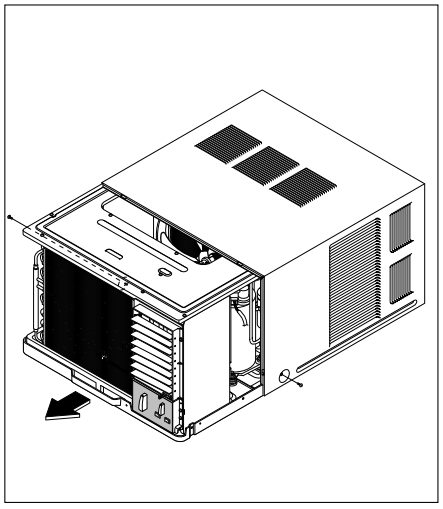
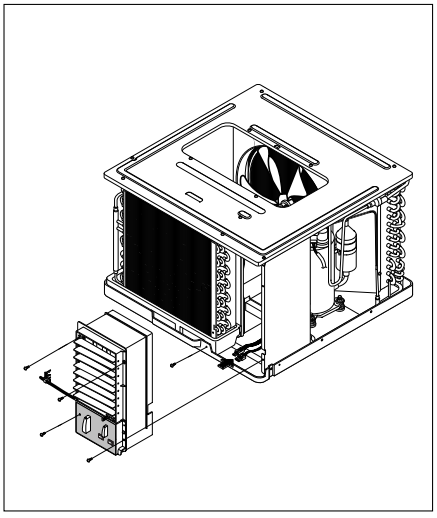
Refrigerant Cycle	Oil Condition		Remarks
	Color	Odor	
Normal	Light Yellow	No Odor	Return with the system
Over-heated	Brown	-	Oil Change
Compressor damage	Dark brown	Pungent oil	Oil Change

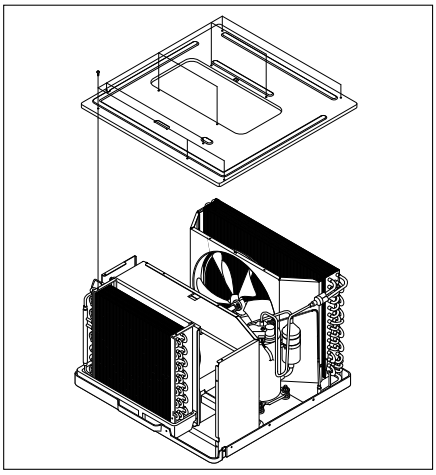
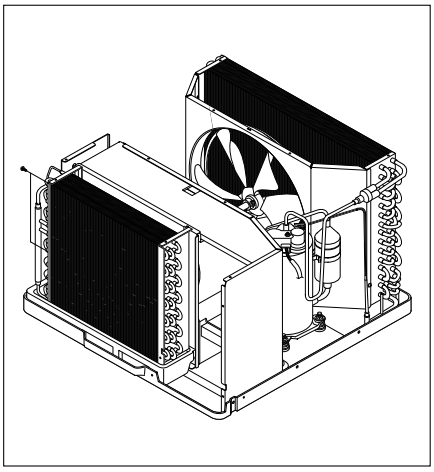
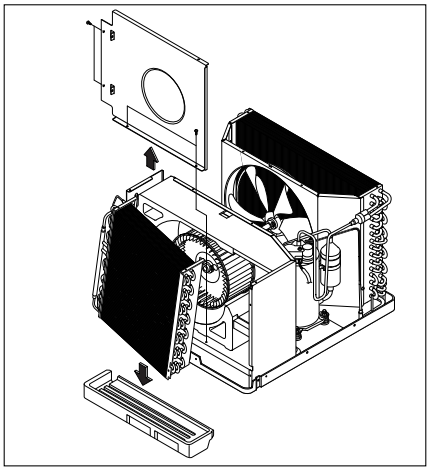
4-2-2 Replacing and refilling the refrigerant oil

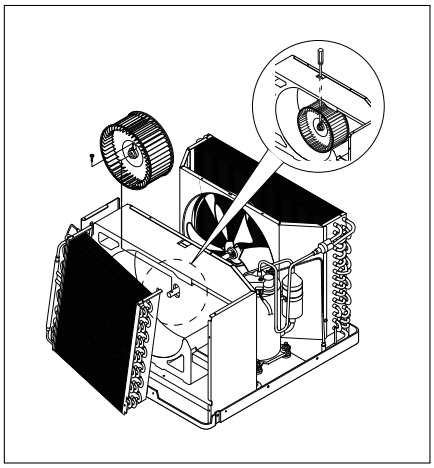
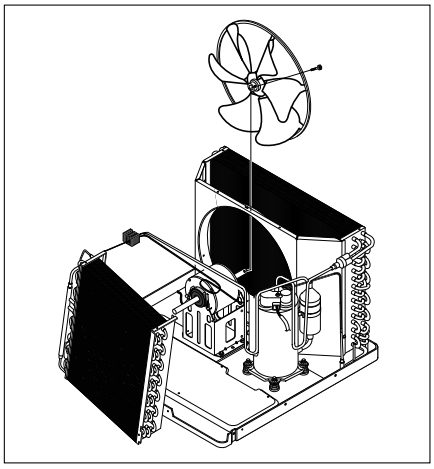
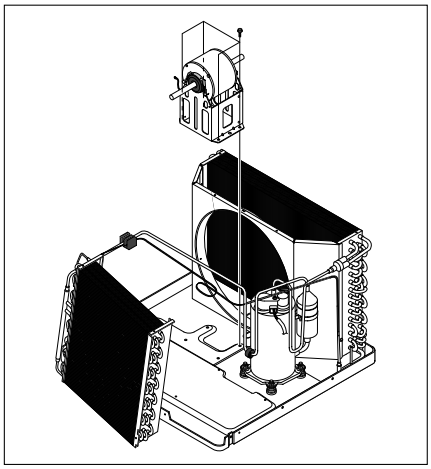
1. Replacing the compressor-Do not fill the system with oil as the compressor is already charged.
2. Replacing the condenser - Refill 50cc.
3. Replacing the evaporator - Refill 50cc.
4. Replacing the refrigerant - Refill 30cc.
5. The high pressure side is filled up with oil after the vacuum is completed.
6. When the refrigerant leaks, it is generally not necessary to refill the oil if the leakage is not severe.

4-3 Disassemby and Reassembly Procedure

Stop operating the air conditioner, and pull out the power cord before repair.

No.	Part name	Procedures	Remarks
¤	Ass'y Grille	1. Hold the lower part of the front grille with two hands while pressing down on both sides of the lower part of the cabinet, pull it forward by about 30¡,˘and then lift it up for removal.	
¤Ł	Ass'y Cabinet	1. Remove the screws on both sides of the cabinet to disconnect the cabinet and frame. 2. Pull the handle on the front side of the bottom, and remove the unit from the cabinet.	
¤Ø	Ass'y Control	1. Remove four machine screws, and earth wire screw. 2. Take out the Control Box forward, and remove two lead-wire assemblies.	

No.	Part name	Procedures	Remarks
¤Œ	Plate-Cover	1. Remove 11 screws on the plate cover.	
¤º	Ass'y-Evaporator	1. Remove two screws on the left side of the evaporator.	
¤	Plate-Evap Casing	1. Lift up the evaporator, and remove the tray-drain. 2. Remove two screws on the bottom side, and two screws on the left side of the plate-evap casing.	

No.	Part name	Procedures	Remarks
¤	Blower	1. Loosen the hexagon nut, and remove the blower.	
¤	Propeller Fan	1. Loosen the hexagon nut, and remove the fan.	
¤	Motor Supporte & Motor	1. Remove four hexagon nuts on the bottom. 2. Move the motor-assembly toward the condenser, and lift up the motor-assembly from the frame. 3. Remove the clips on both sides carefully using the (-) driver.	

5. Troubleshooting

	Procedures
1	Check to see whether the electric circuit or electric parts are damaged before repairing the air conditioner.
2	Conduct the following generally to check whether the electric circuit or other electric parts are damaged.

5-1 Troubleshooting Method and Precautions

5-1-1 Checking of power source

Check to see whether the voltage of the power source is 220V(203~230), 60Hz.
The air conditioner may not operate properly if the voltage is out of this range.

5-1-2 Check the parts that be weak or fragile

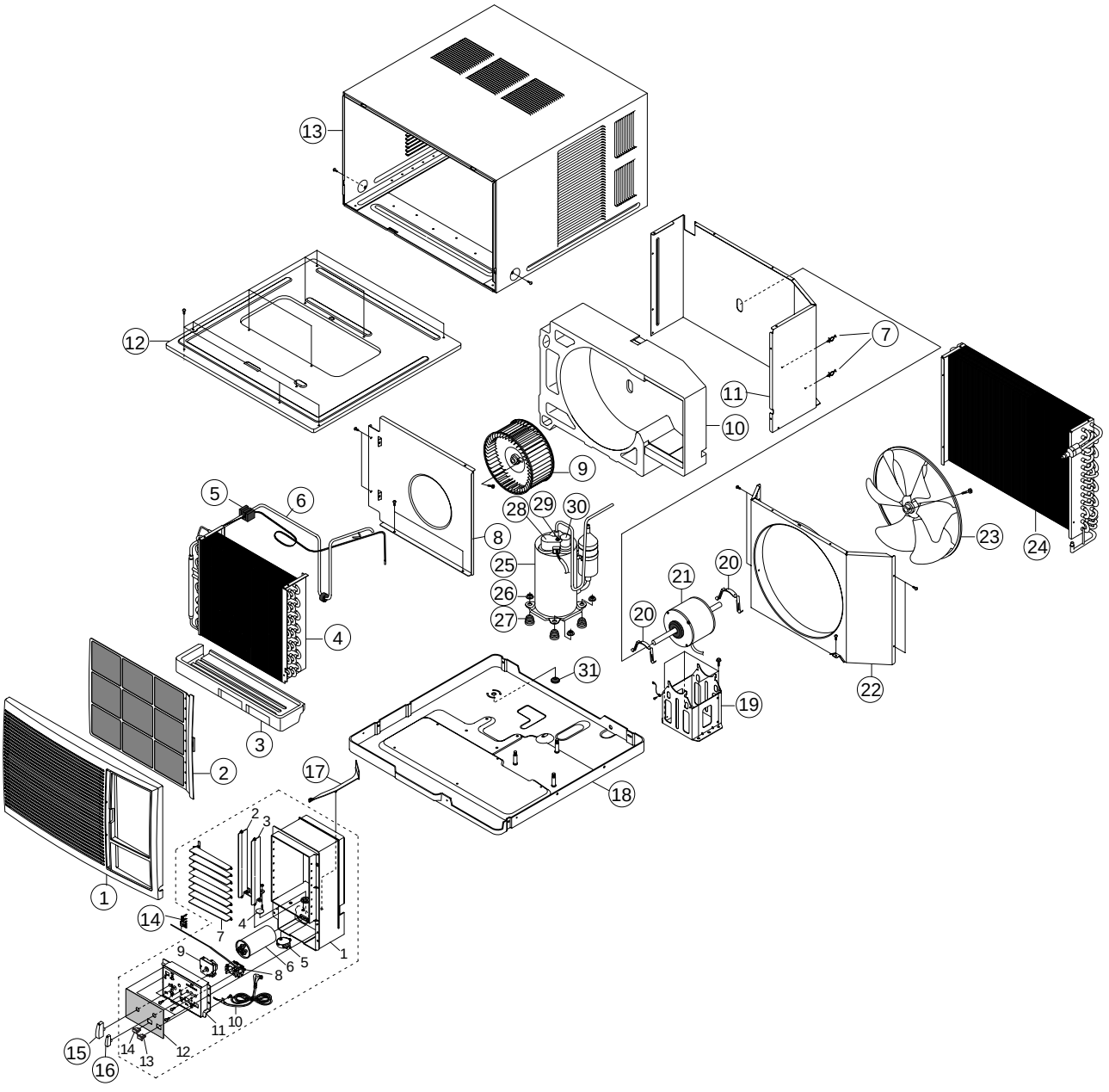
5-1-3 Check the terminals for proper connection

5-1-4 Refer to the table below when there is any malfunction;

No	Trouble	Checkpoints	Possible cause
¤	The compressor does not operate.	1. Check the position of the thermostat. 2. Check the connection of the lead wire. 3. Check the overload protector. 4. Check the compressor.	1. The setting temperature is higher than the room temperature 2. Lead wire disconnected. 3. O.L.P. damaged. 4. Compressor damaged.
¤Ł	The motor does not operate.	1. Check the connection of the lead wire and switch. 2. Check the motor.	1. Lead wire disconnected. 2. Switch damaged. 3. Motor damaged.
¤Ø	The cooling capacity is low.	1. Check the refrigerant for leak. 2. Check the evaporator condition. (freezing, clogging with dust, etc.) ¡ The temperature difference between the air inlet side and air outlet side should be 12¡ at the minimum. ¡ Standard state Indoor : 27¡ , Outdoor : 35¡	1. The leak is caused by a pipe crack. 2. Shortage of the refrigerant. 3. Clean the evaporator, and air filter.
¤Œ	Noise	1. Check the vibration of the pipe. 2. Check the propeller fan and blower for looseness and weakness. 3. Check the motor bearing for noise. 4. Compare the compressor noise with other compressors.	1. The pipe is in contact with other parts. 2. The tightening of the hexagon nut is faulty. 3. Damage of the motor. 4. Damage of the compressor.

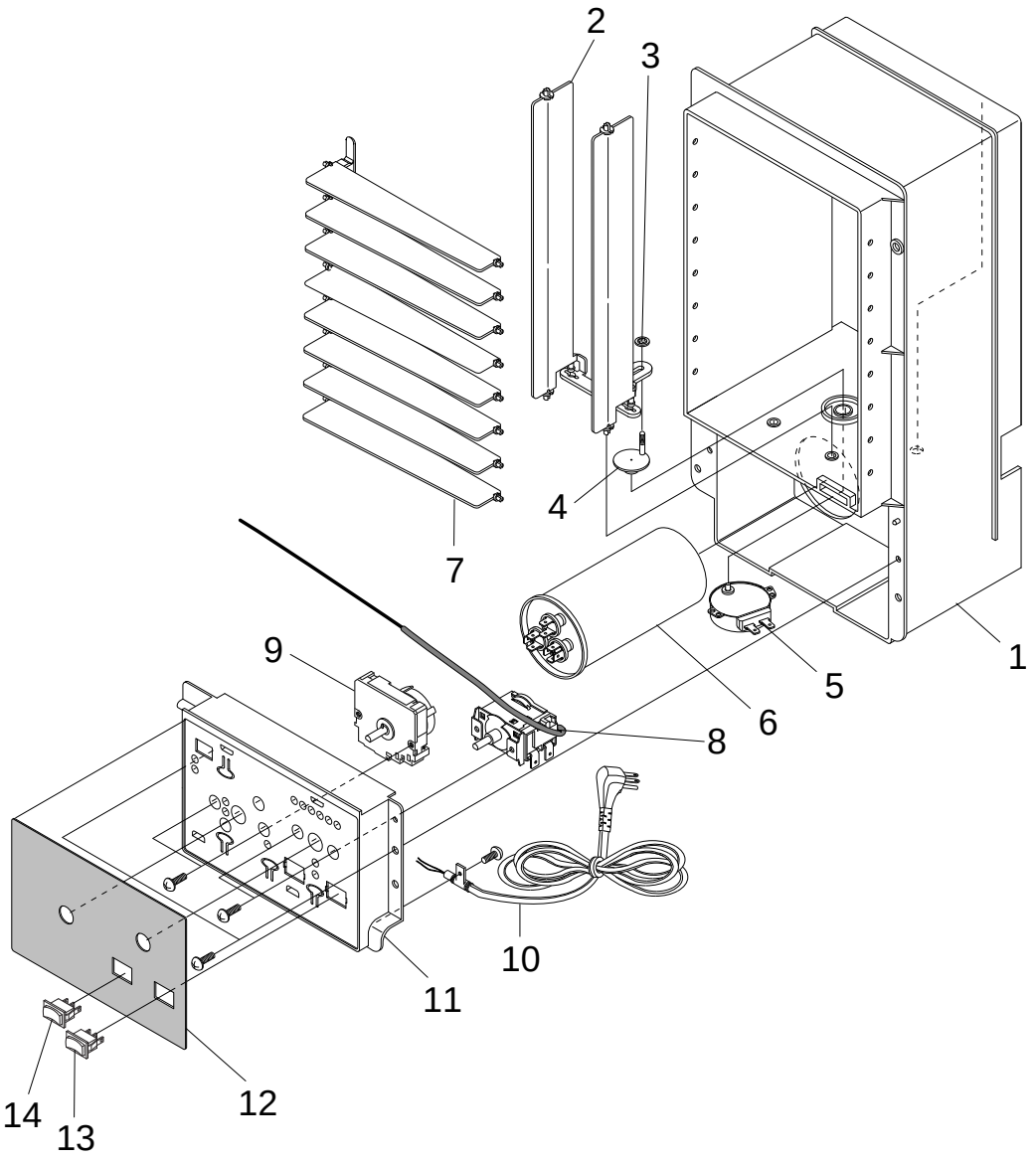
6. Exploded View and Parts List

6-1 Main unit



No.	Code No.	Description	Specification	Q'TY					Remarks
				AW-1407B	AW-1807B	AW-1817B	AW-1808E	AW240WB	
1	DB92-10290B	FRONT GRILLE	HIPS	1	1	1	1	1	
2	DB63-30129A	GUARD-AIR FILTER	ABS	1	1	1	1	1	
3	DB63-40013A	TRAY-DRAIN	FO-PS	1	1	1	1	1	
4	DB96-40152A	EVAPORATOR	ASS'Y	1	1	-	-	-	
	DB75-40064A	EVAPORATOR	ASS'Y(3RƒJ14S)	-	-	1	1	-	
	DB96-40166A	EVAPORATOR	ASS'Y(3RƒJ14S)	-	-	-	-	1	
5	DB73-20096A	RUBBER-COVER PIPE	NBR	1	1	1	1	1	
6	DB62-31419A	TUBE SUCTION(ASS'Y)	OD12.7	1	-	-	-	-	
	DB62-31322A	TUBE SUCTION(ASS'Y)	OD12.7	-	1	1	1	-	
	DB62-31716A	TUBE SUCTION	OD12.7	-	-	-	-	1	
7	DB71-50025A	WIRE-HOLDER	DAWH-3NB	2	2	2	2	2	
8	DB67-30080A	PLATE-EVAP CASING ASS'Y	SGCC-M(Z22)	1	1	1	1	1	
9	DB94-30080A	BLOWER-ASS'Y	ABS£«G/F	1	1	1	1	1	
10	DB61-10154A	CASE-EVAP ASS'Y	FO-PS	1	1	1	1	-	
	DB61-10154B	CASE-EVAP ASS'Y	FO-PS	-	-	-	-	1	
11	DB70-10602A	PLATE-PARTITION	SGCC-M(Z22)	1	1	1	1	1	
12	DB70-10658A	PLATE-COVER ASS'Y	SGCC-M(Z22)	1	1	1	1	1	
13	DB90-10548A	CABINET	ASS'Y	1	1	1	1	1	
14	DB61-40125A	HOLDER-THERMISTER	PP	1	1	1	1	1	
15	DB64-50115A	KNOB-TIMER	ABS	1	1	1	1	1	
16	DB64-50116A	KNOB-THERMO	ABS	1	1	1	1	1	
17	DB75-10022A	DAMPER	ABS	1	1	1	1	1	
18	DB90-20167A	PLATE-BOTTOM	ASS'Y	1	1	1	1	1	
19	DB61-30452C	SUPPORTER	SGCC-M	1	1	1	1	1	
20	DB65-10089A	CLIP-MOTOR	SK5-CSP	2	2	2	2	2	
21	DB31-10117B	MOTOR-FAN	IC-13635SWF6B	1	-	-	-	-	⚠
	DB31-10117A	MOTOR-FAN	IC-13640SWF6B	-	1	1	-	1	⚠
	DB31-10117C	MOTOR-FAN	IC-13435SWJ5A	-	-	-	1	-	⚠
22	DB70-10603A	PLATE-COND CASING	SGCC-M(Z22)	1	1	1	1	1	
23	DB67-50028A	FAN-PROPELLER	ABS+G/F	1	1	1	1	1	
24	DB96-30240A	CONDENSER	ASS'Y	1	1	-	-	-	
	DB75-30075A	CONDENSER	ASS'Y	-	-	1	1	1	
25	DB95-10263A	ASS'Y-COMP	48B190IV2E7	-	1	-	-	-	⚠
	DB95-10076D	ASS'Y-COMP	48A135IV1E1	1	-	-	-	-	⚠
	DB95-10262B	ASS'Y-COMP	48B175IV1E7	-	-	1	-	-	⚠
	DB95-10263B	ASS'Y-COMP	48B180JV1E7	-	-	-	1	-	⚠
	DB95-10263C	ASS'Y-COMP	488220IV1E7	-	-	-	-	1	⚠
26	DB60-30028A	NUT-WASHER	M8, ZPC	3	3	3	3	3	
27	DB73-10004A	GROMMET-ISOLATOR	EPDM	3	3	3	3	3	
28	DB63-10165B	COVER-TERMINAL	NORYL, BLK	1	1	1	1	1	
29	DB60-30018A	NUT-FLANGE	M5, SM20C	1	1	1	1	1	
30	DB47-20001P	OLP	MRA12016-12007	-	1	1	1	-	⚠
	DB47-20007C	OLP	MRA12002-9200	1	-	-	-	-	⚠
	DB47-20002Z	OLP	MAR12068-12007	-	-	-	-	1	⚠
31	DB63-10355A	CAP-DRAIN	CR	1	1	1	1	1	

6-2 Ass'y Control

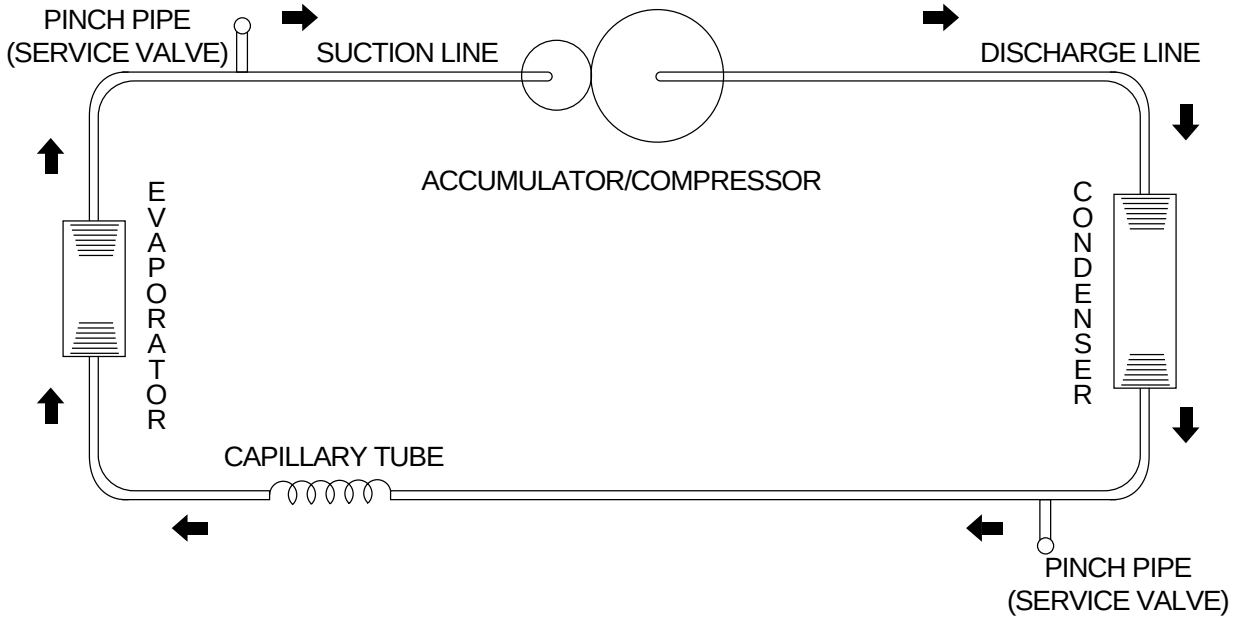


¡ÆPart List

No.	Code No.	Description	Specification	Q'TY					Remarks
				AW-1407B	AW-1807B	AW-1817B	AW-1808E	AW240WB	
1	DB61-60091A	FRAME-BLADE	PS	1	1	1	1	1	
2	DB66-30142A	BLADE-V	PP	1	1	1	1	1	
3	DB60-50010B	STOP WASHER	SUS-304	1	1	1	1	1	
4	DB66-70022A	ARM-BLADE	ABS	1	1	1	1	1	
5	DB95-20065F	SWING-MOTOR	M2LJ49ZU32	1	1	1	1	1	⚠
6	2501-001050	C-OIL	6/25§¿ 450VAC	1	-	-	-	-	⚠
	2501-001059	C-OIL	6/40§¿ 450VAC	-	1	-	1	1	⚠
	2501-001046	C-OIL	6/35§¿ 450VAC	-	-	1	-	-	⚠
7	DB66-30143A	BLADE-H	PP	1	1	1	1		
8	DB47-20055A	THERMOSTAT	BU-A128	1	1	1	1	1	⚠
9	DB45-10008A	TIMER	M250, 12HR	1	1	1	1	1	⚠
10	DB39-10075M	POWER-CORD	DR-17,15A/250V	1	1	1	1	1	⚠
	DB39-10053D	POWER-CORD	AP3 15A/250V	-	-	-	1	1	⚠
11	DB64-70071A	PANEL-CONTROL	PS	1	1	1	1	1	
12	DB64-40159B	INLAY-CONTROL	PC	1	1	1	1	1	
13	DB34-90022A	SWITCH-SELECTOR	6A,250V,2Pin	1	1	1	1	1	⚠
14	DB34-90022E	SWITCH-SELECTOR	6A,250V,3Pin	1	1	1	1	1	⚠

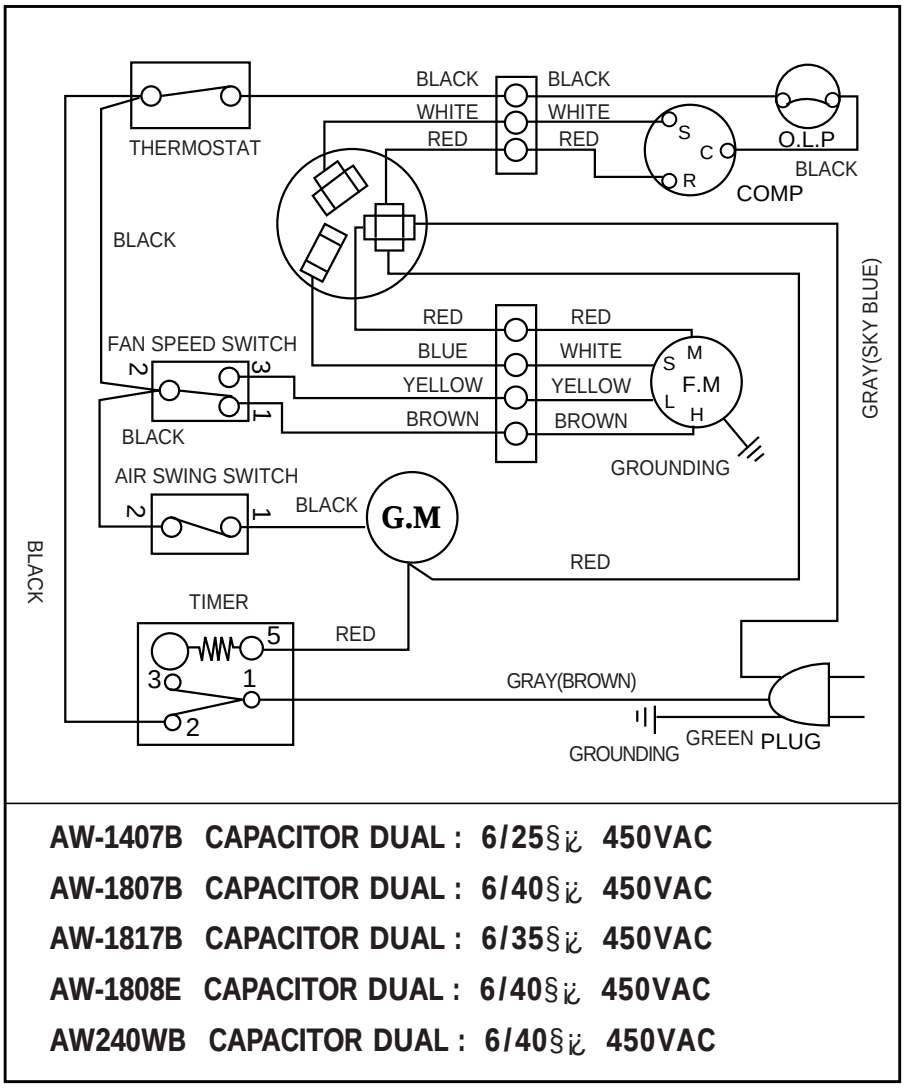
7. Block Diagram

7-1 Refrigerating Cycle Block Diagram



8. Wiring Diagram

8-1 AW-1407B/1807B/1817B/AW240WB



AW-1407B CAPACITOR DUAL : 6/25§¿ 450VAC

AW-1807B CAPACITOR DUAL : 6/40§¿ 450VAC

AW-1817B CAPACITOR DUAL : 6/35§¿ 450VAC

AW-1808E CAPACITOR DUAL : 6/40§¿ 450VAC

AW240WB CAPACITOR DUAL : 6/40§¿ 450VAC

MEMO

UPDATE LOG SHEET				
Application date	**Page**	**Part#**	**Note(Cause & Solution)**	**S/Bulletin#**

Use this page to keep any special servicing information.(Service Bulletin, etc.)
If only parts number changes, Just change parts number directly on parts list.
And if you need more information, please see the service bulletin

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SyncMaster 17GLi/CMG7387L Service Manual
First edition June 1995.

Printed in Korea.

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